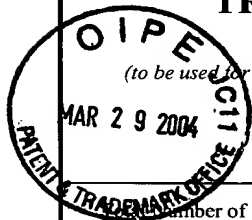


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<b>TRANSMITTAL FORM</b> (to be used for all correspondence after initial filing)		Application Number	09/639,850
		Filing Date	August 16, 2000
		First Named Inventor	Toshihiro ENDO et al.
		Group Art Unit	2854
		Examiner Name	Marvin P. Crenshaw
Number of Pages in This Submission		Attorney Docket Number	740250-814

ENCLOSURES (check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment / Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Assignment Papers (for an Application) <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Declaration and Power of Attorney <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input checked="" type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input type="checkbox"/> Application Data Sheet <input type="checkbox"/> Request for Corrected Filing Receipt with Enclosures <input type="checkbox"/> A self-addressed prepaid postcard for acknowledging receipt <input type="checkbox"/> Other Enclosure(s) (please identify below):
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Firm or Individual name	<b>Donald R. Studebaker, Reg. No. 32,815</b> Nixon Peabody LLP 401 9 <sup>th</sup> Street, N.W. Suite 900 Washington, D.C. 20004-2128
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Date	March 29, 2004

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# FEE TRANSMITTAL FOR FY 2004

Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$330.00)

Complete if Known

Application Number 09/639,850  
Filing Date August 16, 2000  
First Named Inventor Toshihiro ENDO et al.  
Examiner Name Marvin P. Crenshaw  
Art Unit 2854  
Attorney Docket No. 740250-814

## METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ Other ☐ None

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## FEE CALCULATION

### 1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee (\$)	Small Entity Fee Code	Small Entity Fee (\$)	Fee Description	Fee Paid
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) (\$ 0)

### 2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims  -20\*\* =  X  =  0

Independent Claims  -3\*\* =  X  =  0

Multiple Dependent  X  =  0

Large Entity Fee Code	Large Entity Fee (\$)	Small Entity Fee Code	Small Entity Fee (\$)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$ 0)

\*\*or number previously paid, if greater; For Reissues, see above

## FEE CALCULATION (continued)

### 3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee (\$)	Small Entity Fee Code	Small Entity Fee (\$)	Fee Description
1051	130	2051	65	Surcharge - late filing fee or oath
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet
1053	130	1053	130	Non-English specification
1812	2,520	1812	2,520	For filing a request for <i>ex parte</i> reexamination
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action
1251	110	2251	55	Extension for reply within first month
1252	420	2252	210	Extension for reply within second month
1253	950	2253	475	Extension for reply within third month
1254	1,480	2254	740	Extension for reply within fourth month
1255	2,010	2255	1,005	Extension for reply within fifth month
1401	330	2401	165	Notice of Appeal
1402	330	2402	165	Filing a brief in support of an appeal
1403	290	2403	145	Request for oral hearing
1451	1,510	1451	1,510	Petition to institute a public use proceeding
1452	110	2452	55	Petition to revive - unavoidable
1453	1,330	2453	665	Petition to revive - unintentional
1501	1,330	2501	665	Utility issue fee (or reissue)
1502	480	2502	240	Design issue fee
1503	640	2503	320	Plant issue fee
1460	130	1460	130	Petitions to the Commissioner
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)
1806	180	1806	180	Submission of Information Disclosure Stmt
8021	40	8021	40	Recording each patent assignment per property (times number of properties)
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))
1801	770	2801	385	Request for Continued Examination (RCE)
1802	900	1802	900	Request for expedited examination of a design application

Other fee (specify) \_\_\_\_\_

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$330)

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## SUBMITTED BY

Name (Print/Type) Donald R. Studebaker

Signature

Registration No. (Attorney/Agent)

32,815

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of  
Toshihiro ENDO et al.  
Serial No. 09/639,850  
Filed: August 16, 2000  
For: STENCIL PRINTER



) Group Art Unit: 2854  
) Examiner: Marvin P. CRENSHAW  
) Confirmation No.: 2448  
)  
) March 29, 2004

CERTIFICATE OF MAILING OR TRANSMISSION  
[37 CFR 1.8(a)]

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**APPEAL BRIEF**

Mail Stop **Appeal Brief-Patents**  
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Sir:

In accordance with the provisions of 35 U.S.C. §134 and 37 C.F.R. §1.192(a), Appellants submit this *Appeal Brief* in triplicate to appeal the Examiner's final rejection of claims 2-8 in the *Office Action* dated November 5, 2003.

The Commissioner is authorized to charge the \$330.00 requisite Government fee (large entity) and any additional fees that may be required by this paper, and to credit any overpayment, to Deposit Account No. 19-2380 (740250-814).

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**I. REAL PARTIES IN INTEREST**

The named inventors, namely Toshiro ENDO, Amimachi, Japan, Yasuo YAMAMOTO, Amimachi, Japan, and Tadayuki WAKATABI, Amimachi, Japan, have assigned all ownership rights in the pending application to Riso Kagaku Corporation 2-20-15, Shinbashi, Minato-ku, Tokyo, Japan as evidenced by the Assignment document recorded at reel 011025, frame 0636 on August 16, 2000. Accordingly, Riso Kagaku Corporation is the real party in interest.

**II. RELATED APPEALS AND INTERFERENCES**

The Appellants, their legal representatives, and the assignee are not aware of any other pending appeals or interferences which will directly affect or be directly affected by, or have a bearing on the Board's decision in this appeal.

**III. STATUS OF CLAIMS**

Claims 2-8 are pending in the present application, of which claims 6, 7 and 8 are independent. No claims have been deemed allowable over the prior art of record by the Examiner. All pending claims are on appeal.

Claims 2, 3 and 8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,051,777 issued to Black (hereafter Black) in view of U.S. Patent No. 4,111,056 issued to Mastromatteo (hereafter Mastromatteo). Further, claim 4 stands rejected under 35 U.S.C. §103(a) as unpatentable over Black in view of Mastromatteo and further in view of U.S. Patent No. 3,843,974 issued to Miller et al. (hereafter Miller). Still further, claims 5 and 7 stand rejected under 35 U.S.C. §103(a) as unpatentable over Black in view of

Mastromatteo and further in view of U.S. Patent No. 5,019,202 issued to Kawahata et al. (hereafter Kawahata). Finally, claim 6 stands rejected under 35 U.S.C. §103(a) as unpatentable over Black in view of Mastromatteo and Miller, and further in view of Applicants' Admitted Prior Art (hereinafter AAPA). This appeal is directed to the above-mentioned rejections, and the status of the claims in this application is as set forth above in Appendix A.

#### **IV. STATUS OF THE AMENDMENTS**

All amendments previously submitted in connection with the present application are believed to have been entered and fully considered by the Examiner. The most recent response filed by Appellants is the Amendment filed August 21, 2003, which per the Final Office Action dated November 5, 2003 has been fully considered by the Examiner and found not to overcome the rejections.

#### **V. SUMMARY OF THE INVENTION**

The present invention is directed to a stencil printer comprising an ink supply diaphragm pump having, among other features, a diaphragm operable between a first position and a second position permitting fluid flow of ink. In accordance with the claimed invention, the diaphragm is driven by a drive assembly such that a stress applied to the diaphragm is limited to less than 75% of the elastic limit of the diaphragm. The presently claimed invention imparts non-obvious advantageous features over conventional stencil printers. For example, according to page 1 line 24 through page 3, line 9 of the specification on, the Appellants have found that when conventional piston or plunger pumps are used in stencil printers using ink, curing or gelling of the ink is produced do to frictional forces arising from

the sliding of the piston or plunger pumps. In response to this problem, Appellants proposed the use of the diaphragm pump having the following properties: First, a stress applied to the diaphragm is limited to less than 75% of the elastic limit of the diaphragm because a rubber diaphragm deforms and deteriorates with use and the performance of the pump is affected. Secondly, in order to suppress deterioration of the diaphragm and thereby increase the operational life, the diaphragm is composed of fluoro-rubber or natural rubber. Thirdly, the diaphragm is of a material whose swelling ratio to the ink is not larger than 1.05 so that the ink can be stably supplied for a long period of time. When the swelling ratio of the diaphragm material to the ink in the diaphragm is larger than 1.05, the diaphragm is deformed and the initial performance of the pump is difficult to maintained.

**VI. STATEMENT OF ISSUES**

- A. Whether claims 2, 3 and 8 are *prima facie* obvious in view of the combination of Black and Mastromatteo.
- B. Whether objective evidence of non-obviousness has been set forth to establish the patentability of claims 2, 3 and 8 over the combination of Black and Mastromatteo.
- C. Whether claim 4 is *prima facie* obvious in view of Black, Mastromatteo and Miller.

- D. Whether objective evidence of non-obviousness has been set forth to establish the patentability of claim 4 over the combination of Black, Mastromatteo and Miller.
- E. Whether claims 5 and 7 are *prima facie* obvious in view of Black, Mastromatteo, and Kawahata.
- F. Whether objective evidence of non-obviousness has been set forth to establish the patentability of claims 5 and 7 over the combination of Black, Mastromatteo, and Kawahata.
- G. Whether claim 6 is *prima facie* obvious in view of Black, Mastromatteo, Miller and AAPA.
- H. Whether objective evidence of non-obviousness has been set forth to establish the patentability of claim 6 over the combination of Black, Mastromatteo, Miller and AAPA.

**VII. GROUPING OF THE CLAIMS**

Appellants respectfully submit that the rejected claims 2-8 stand or fall together.



## **VIII. ARGUMENTS**

A. Claims 2, 3 and 8 are not *prima facie* obvious in view of the combination of Black and Mastromatteo.

Claims 2, 3 and 8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Black in view of Mastromatteo. This rejection is respectfully traversed and reversal of the Examiner's position with respect thereto is earnestly solicited in that the combination and more specifically, the Mastromatteo reference cited by the Examiner neither discloses nor suggests limiting deformation of a diaphragm to a stress below the elastic limit necessary so it will return from a pressure loaded position to a preloaded position to maintain a normal force as asserted by the Examiner. Further, Black does not teach, disclose or suggest a diaphragm driven by a drive assembly such that a stress applied to the diaphragm is limited to less than 75% of the elastic limit of the diaphragm in a stenciling apparatus. Therefore, Mastromatteo cannot cure the deficiency of Black, and the requisite motivation to combine these cited references in the manner suggested by the Examiner is not present. Accordingly, it is respectfully submitted that the references cannot be combined in the manner suggested by the Examiner in rejecting the present invention.

Turning now to independent claim 8, the claim recites a stencil printer comprising: an ink supply pump comprising a diaphragm pump having a diaphragm operable between a first position preventing fluid flow of an ink and a second position permitting fluid flow of the ink therethrough; and a drive assembly for driving the diaphragm between the first and second positions, wherein the diaphragm is driven by the drive assembly such that a stress applied to the diaphragm is limited to less than 75% of the elastic limit of the diaphragm.

In the rejection of claims 2, 3, and 8, the Examiner states that "Mastromatteo teaches limiting deformation of a diaphragm to a stress below the elastic limit necessary so they will

return from a pressure loaded position to the preloaded position to maintain a normal force.” However, Appellants respectfully submit that Mastromatteo discloses a diaphragm used in a hydraulic device, wherein the diaphragm is used in conjunction with a liquid which acts as a cushion, conforming to the shape of the diaphragm, thereby preventing damage to the diaphragm”.

Unlike the Examiner’s interpretation of Mastromatteo, in col. 6, lines 9-20, the cited text of Mastromatteo actually states the following:

*“Effectively, the diaphragm 30, by means of the liquid 74, becomes an integral part of the upper housing wall 58 and, therefore, will remain in tact. If the valve seat 60 and diaphragm 30 are disposed so that the valve member 34 is seated within the elastic of the diaphragm 30, the diaphragm will remain undistorted and resilient, ready for renewed use once the lost liquid or integrity of the connection to the instrument 64 is restored.”*

Hence, the above-mentioned teaching of Mastromatteo has been misunderstood or mischaracterized as teaching “limiting deformation of a diaphragm to a stress below the elastic limit necessary so they will return from a pressure loaded position to the preloaded position to maintain a normal force.”

Appellants respectfully submit that Mastromatteo discloses diaphragm 30 as having concentric corrugations 32 which make the central portion of the diaphragm flexible and sensitive to variations of pressure exerted upon it, as shown in col. 4, lines 6-8. Further, the diaphragm 30 of Mastromatteo is not driven by a drive assembly between a first and a second position as in the presently claimed invention.

Unlike Appellants’ diaphragm that is actuated by a drive assembly to pump ink in a stencil printer, the diaphragm 30 of Mastromatteo is driven by hydraulic fluid and is utilized in a completely different manner, such as in automobile braking systems, for example, as disclosed in col. 12, lines 58-64 of Mastromatteo. Consequently, it is respectfully submitted

that one of ordinary skill in the art of stencil printing and stencil printers, would not turn to the teachings of Mastromatteo.

Furthermore, from the disclosed corrugated diaphragm, its use in a high pressure hydraulic system, and its function, all of which are different from Appellants' claimed invention, Appellants respectfully assert that it is not possible to ascertain that the stress of the diaphragm of Mastromatteo is or should be limited to less than 75% of the elastic limit of the diaphragm as recited in Appellants' claimed invention.

Simply put, even if combined with the teachings of Black, Mastromatteo does not teach, disclose, or suggest that a stress applied is limited to less than 75% of the elastic limit of the diaphragm.

According to MPP §2143.01, the prior art must suggest the desirability of the claimed invention. Appellants respectfully submit that the Examiner has failed to provide the requisite motivation for combining the references in the suggested manner, or to provide the requisite disclosure in Mastromatteo, as well as Black, to reach or render obvious Appellants' claimed diaphragm, wherein a stress applied to it is limited to a stress that is less than 75% of the elastic limit of the diaphragm, as recited in independent claim 8, as well as in dependent claims 2 and 3.

B. The requisite motivation for combining the teachings of Black and Mastromatteo does not exist to support a prima facie case of obviousness as proposed by the Examiner in rejected claims 2, 3 and 8.

Claims 2, 3 and 8 stand rejected under 35 U.S.C. §103(a) as unpatentable over Black in view of Mastromatteo. This rejection is respectfully traversed and reversal of the Examiner's position with respect thereto is earnestly solicited in that the objective evidence

of obviousness has not been set forth by the Examiner for the reasons given above and those set forth hereinbelow.

As mentioned above, Mastromatteo completely fails to disclose or suggest that a stress applied is limited and that a stress applied is limited to less than 75% of the elastic limit of the diaphragm.

In the rejection, the Examiner asserted that the optimum stress required in order to maintain the diaphragm in proper form would be determined by those having ordinary skill in the art through routine experimentations. In response, Appellants respectfully submit that routine experimentation is not sufficient for providing the required motivation for a obviousness rejection. According to MPEP 2144.05 (II)(B), only result-effective variables can be optimized, and a particular parameter must first be recognized as a result-effective variable before the determination of the optimum or workable ranges of the variable might be characterized as routine experimentation. As submitted above, Mastromatteo is silent about limiting a stress level on a diaphragm. Hence, the stress level was not recognized in Mastromatteo as a result-effective variable for optimization. Accordingly, the Examiner's argument that one of ordinary skill in the art would limit the stress applied to the diaphragm to less than 75% through routine experimentation is improper.

Further, according to MPEP 2143.01, the prior art must suggest the desirability of the claimed invention. Nothing in the prior art cited in the Office Action would suggest the necessity or desirability of using the diaphragm driven by the drive assembly such that a stress is applied to the diaphragm is limited to less than 75% of the elastic limit of the diaphragm. Furthermore, one skilled in the art of stencil printing and stencil printers would not turn to the teachings of Mastromatteo which is intended to be utilized in the transmission of pressure of

liquids, solids and gases primarily in the automotive and airline arts as noted in col. 9, lines 12-19, and col. 12, lines 58-64.

Accordingly, at least for the reasons set forth above with respect to independent claim 8, as well as dependent claims 2 and 3, Appellants respectfully contend that the Patent Office has failed to carry its burden for establishing a *prima facie* case of obviousness. The reversal of the Examiner's position, as well as the allowance of claims 2, 3 and 8 in view of the foregoing arguments, is respectfully requested.

C. Claim 4 is not *prima facie* obvious in view of the combination of Black, Mastromatteo and Miller.

The Appellants respectfully contend that the findings of the Office Action fail to support a *prima facie* case of obviousness since it fails to provide suggestion or motivation to modify Black and Mastromatteo with teachings of the Miller reference.

The requirements for establishing a *prima facie* case of obviousness, as detailed in MPEP § 2143 - 2143.03 (pages 2100-122 - 2100-136), are: first, there must be some suggestion or motivation, either in the reference themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference to combine the teachings; second, there must be a reasonable expectation of success; and, finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations.

With respect to Miller, the reference is directed to an intimal lining pump with vertically drafted webs for a circulator assist device. In the rejection, the Examiner cited Miller as a secondary reference disclosing a pump composed of fluoro-rubber or natural rubber in col. 1, lines 55-61. However, Miller clearly lacks features set forth in independent claim 8 of the present invention. The cited text of Miller does not appear to support the

Examiner's assertion that Miller teaches using fluoro-rubber or natural rubber as a diaphragm. As recited in, e.g., claim 3 of Miller, it appears that the material for the intimal lining of Miller consists of polyurethane, silicone rubber, and polypropylene, and not of fluoro-rubber or natural rubber as alleged by the Examiner. Moreover, in the rejection of claim 6, the Examiner acknowledges that Miller uses silicon rubber, which is different from the Examiner's earlier assertion of fluoro-rubber or natural rubber.

With respect to Mastromatteo, as provided above, Mastromatteo is not related to a stencil apparatus but rather to a hydraulic control device, such as, e.g., automobile braking system master cylinder (col. 9, lines 12-19 and col. 12, lines 58-64 of Mastromatteo). Because of the completely different structure of Mastromatteo's control device and its functionality, and as there is no suggestion or motivation in Mastromatteo to combine its teachings with the intimal lining in a human arterial blood pump of Miller, the combination of Mastromatteo and Miller is believed to be improper. For the sake of argument, even if the hydraulic control device of Mastromatteo is combined with Miller, the resulting device would not work because the intimal lining for a human arterial pump would not last in the high pressure control device of Mastromatteo.

D. The requisite motivation for combining the teachings of Black, Mastromatteo and Miller does not exist to support a *prima facie* case of obviousness as proposed by the Examiner in rejected claim 4.

As mentioned above, Mastromatteo discloses a hydraulic control device that is structurally and functionally different from that of Black. Further, Mastromatteo is completely silent about limiting a stress applied to a diaphragm as well as limiting a stress to less than 75% of the elastic limit of the diaphragm. Still further, Miller does not appear to

teach or suggest fluoro-rubber or natural rubber as a material used in a diaphragm. Therefore, without proper motivation or suggestion in the references to combine their respective teachings to arrive at Appellants' claimed invention, and even if combined, the combination of the references still does not disclose all of the claimed features, the §103(a) rejection of claim 4 is improper.

Accordingly, at least for the reasons set forth above with respect to independent claim 8, as well as dependent claim 4, Appellants respectfully contend that the Patent Office has failed to carry its burden for establishing a *prima facie* case of obviousness. The reversal of the Examiner's position, as well as the allowance of claim 4 in view of the foregoing arguments, is respectfully requested.

E. Claims 5 and 7 are not *prima facie* obvious in view of the combination of Black, Mastromatteo and Kawahata.

Appellants respectfully contend that the findings of the Office Action fail support a *prima facie* case of obviousness since it fails to provide requisite suggestion or motivation to modify Black and Mastromatteo with Kawahata.

As previously mentioned, the requirements for establishing a *prima facie* case of obviousness, as detailed in MPEP § 2143 - 2143.03 (pages 2100-122 - 2100-136), are: first, there must be some suggestion or motivation, either in the reference themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference to combine the teachings; second, there must be a reasonable expectation of success; and, finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations.

The Examiner asserted that Kawahata discloses an UV ray curing ink. Therefore, it would be obvious to combine the UV curing ink of Kawahata with Black and Mastromatteo to have a faster drying ink. In response, Appellants respectfully submit that, as established above in relation to the rejection of independent claim 8, without proper motivation to combine Black and Mastromatteo, and as Mastromatteo is deficient in teaching, disclosing, or suggesting a diaphragm pump configured such that the maximum stress applied thereto during operation does not exceed 75% of the elastic limit of the diaphragm pump, it is improper to combine Black and Mastromatteo in the §103(a) rejection. Moreover, whether Kawahata teaches UV curing ink or not, Kawahata still cannot cure the above-discussed deficiency of Black and Mastromatteo.

Accordingly, at least for the reasons set forth above with respect to the rejection of claims 5 and 7, Appellants respectfully contend that the Patent Office has failed to carry its burden of establishing a prima facie case of obviousness, and the reversal of the Examiner's position as well as the allowance of claims 5 and 7 in view of the foregoing arguments is respectfully requested.

F. The requisite motivation for combining the teachings of Black, Mastromatteo and Kawahata does not exist to support a prima facie case of obviousness as proposed by the Examiner in rejected claims 5 and 7.

As mentioned above, Mastromatteo discloses a hydraulic control device that is structurally and functionally different from that of Black, and their teachings are not combinable. Further, Mastromatteo is completely silent about limiting a stress applied to a diaphragm as well as limiting a stress to less than 75% of the elastic limit of the diaphragm, and hence Mastromatteo does not cure the deficiency of Black.



Further, although Kawahata discloses UV curing ink, the combination of the cited prior art references still does not teach or suggest all of the claimed features. Therefore, as proper motivation or suggestion in the references to combine their respective teachings to arrive at Appellants' claimed invention is not shown, and as the combination of the references still does not disclose all of the claimed features, the §103(a) rejection of claims 5 and 7 is improper.

Accordingly, at least for the reasons set forth above with respect to claims 5 and 7, Appellants respectfully contend that the Examiner has failed to carry its burden for establishing a prima facie case of obviousness. The reversal of the Examiner's position, as well as the allowance of claims 5 and 7 in view of the foregoing arguments, is respectfully requested.

G. Claims 6 is not prima facie obvious in view of the combination of Black, Mastromatteo, Miller and AAPA.

The 35 U.S.C. §103(a) rejection of claim 6 is respectfully traversed and reversal of the Examiner's position with respect thereto is earnestly solicited in that none of the cited prior art references teach, disclose, or suggest a diaphragm composed of a material whose swelling ratio to the ink is not larger than 1.05, and the maximum stress applied to the diaphragm during operation of a diaphragm pump does not exceed 75% of the elastic limit of the diaphragm as recited in claim 6.

In the rejection, the Examiner asserted that Miller teaches a diaphragm pump which is made of silicon rubber, and that silicon rubber is known to have a swelling ratio to the ink of less than 1.05, therefore it would be obvious to combine Black, Miller, and AAPA to arrive at Applicants' claim 6. However, Appellants respectfully assert that not only is Miller non-

analogous art, but Miller also fails to teach, suggest or disclose ink, let alone a swelling ratio to the ink not larger than 1.05 as recited in claim 6.

In contrast with the present invention of claim 6, Miller is directed toward an intimal lining pump with vertically drafted webs for a circulatory assist device. Specifically, the pump of Miller is connected to a human arterial blood supply (see Abstract) and not ink. Therefore, Miller cannot possibly teach suggest the claimed swelling ratio of claim 6 of the present application.

“In order to rely on a reference for the basis of rejection of an Applicant’s invention, the reference must either be in the field of Applicant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned.” *In re Oetiker*, 977 F.2d 1433, 1446, 24 USPQ 2d 1443, 1445 (Fed. Cir. 1992). Applicants respectfully submit that Miller is not in the field of Applicants’ endeavor and consequently, Miller cannot be considered analogous to the claimed invention and is not properly applicable as prior art. Since Miller is used in connection with pumping blood, Miller is not pertinent to the particular problem solved by Appellants’ invention.

Further, Miller does not suggest the desirability of using a material whose swelling ratio to ink is not larger than 1.05 as recited in claim 6. Hence, the rejection does not follow the requirements set forth in MPEP §2143.01 cited above.

Accordingly, Applicants respectfully submit that Miller, either alone or in combination with Black, Mastromatteo and AAPA, fails to teach, suggest or disclose the swelling ratio to ink as claimed. Further, although the present specification discloses swelling ratios for fluoro-rubber, silicon rubber and natural rubber, there is no suggestion or motivation in Miller of any specific swelling ratio or the importance of using a material whose swelling ratio to ink is not larger than 1.05 as recited in claim 6. Still further, as

argued above in relation to the rejection of independent claim 8, Mastromatteo does not teach, disclose, or suggest that a stress applied is limited to less than 75% of the elastic limit of the diaphragm. Therefore, it is respectfully requested that the rejection of claim 6 be reversed.

H. The requisite motivation for combining the teachings of Black, Mastromatteo, Miller and AAPA does not exist to support a prima facie case of obviousness as proposed by the Examiner in rejected claim 6.

For the sake of brevity, the improper combination of Black and Mastromatteo, which is discussed above in relation to the rejection of claim 8, is not discussed again here. However, it should be noted that the arguments in relation to the rejection of claim 8 are fully applicable to the rejection of claim 6.

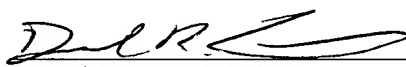
With respect to Miller, the Examiner has failed to provide connection between the disclosure of silicon rubber in a blood pump of Miller and the material having a swelling ratio to the ink of not larger than 1.05 in a stencil printer of Appellants' claim 6. According to MPEP 2143.01, the prior art must suggest the desirability of the claimed invention. Nothing in Miller, which relates to a blood pumping device, would suggest the desirability of using a material whose swelling ratio to ink is not larger than 1.05 as recited in claim 6.

Accordingly, at least for the reasons set forth above with respect to independent claim 6, Appellants respectfully contend that the Patent Office has failed to carry its burden for establishing a prima facie case of obviousness. The reversal of the Examiner's position, as well as the allowance of claim 6 in view of the foregoing arguments, is respectfully requested.

**IX. CONCLUSION**

For the foregoing reasons it is respectfully asserted that pending claims 2-8 of the present application are allowable over the applied prior art references. Appellants respectfully request that the outstanding rejections of record of the claims be reversed, that such pending claims be allowed and that the present application be passed to issue.

Respectfully submitted,



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**APPENDIX A**

**PENDING CLAIMS**

1. (Cancelled).
2. (Previously presented) A stencil printer as defined in Claim 8 in which the drive assembly is configured to stop in a position where the stress applied to the diaphragm of the diaphragm pump is less than 75% of the elastic limit of the diaphragm.
3. (Previously presented) A stencil printer as defined in claim 8 in which the drive assembly is configured such that the maximum stress applied to the diaphragm during operation of the diaphragm pump is less than 75% of the elastic limit of the diaphragm.
4. (Previously presented) A stencil printer as defined in Claim 8 wherein said diaphragm is composed of fluoro-rubber or natural rubber.
5. (Previously presented) A stencil printer as defined in Claim 8 wherein said ink comprises an ultraviolet ray curing ink.
6. (Previously presented) A stencil printer comprising an ink supply pump in the form of a diaphragm pump, said diaphragm pump including a diaphragm composed of a material whose swelling ratio to the ink is not larger than 1.05, wherein the maximum stress applied to the diaphragm during operation of the diaphragm pump does not exceed 75% of the elastic limit of the diaphragm.
7. (Previously presented) A stencil printer comprising an ink supply pump for ultraviolet curing ink, said ink supply pump being in the form of a diaphragm pump configured so that the maximum stress applied thereto during operation does not exceed 75% of the elastic limit of the diaphragm pump.

8. (Original) A stencil printer comprising:

an ink supply pump comprising a diaphragm pump having a diaphragm operable between a first position preventing fluid flow of an ink and a second position permitting fluid flow of the ink therethrough; and

a drive assembly for driving said diaphragm between said first and second positions,

wherein said diaphragm is driven by said drive assembly such that a stress applied to the diaphragm is limited to less than 75% of the elastic limit of the diaphragm.